

110. (New) The device of claim 109, wherein the biological species is a cell.

111. (New) The device of claim 109 wherein the background region or the immobilization islands comprise more than one self-assembled monolayer.

112. (New) A device for selectively adhering protein in a specific and predetermined pattern comprising:

a surface;

a plurality of immobilization islands in a specific and predetermined pattern over the surface that selectively adhere protein to the islands, the islands isolated from each other by a background region contiguous with the islands and to which the protein does not adhere.

113. (New) A device having a surface, comprising:

islands of a self-assembled monolayer terminating in a non-polar functionality surrounded by regions of a polyethylene glycol-terminating self-assembled monolayer, wherein the nonpolar functionality of the islands is protein adherent, while the polyethylene glycol is not protein adherent.

114. (New) A device for immobilizing at least one biological material in a specific and predetermined pattern comprising:

a surface;

an array of immobilization islands in a specific and predetermined pattern over the surface isolated from each other by at least one background region;

the array of immobilization islands comprising a first self-assembled monolayer having a formula  $HS(CH_2)_nR$  in which R comprises at least one first functional group and wherein the at least one first functional group is selected to be biophilic;

the at least one background region comprising a second self-assembled monolayer having a formula  $HS(CH_2)_nR$  in which R comprises a second functional group wherein the second functional group is selected to be biophobic; and

wherein the HS(CH<sub>2</sub>)<sub>n</sub> portion of the first and second self-assembled monolayers are the same.

115. (New) An article defining a surface; the surface comprising a plurality of isolated regions of a molecular species on the surface, the plurality of isolated regions defining a pattern, the pattern corresponding to a pattern of a stamping surface able to direct formation of the pattern of the molecular species on the surface, wherein the molecular species exposes a first chemical functionality.

116. (New) The article of claim 115, wherein the plurality of isolated regions comprise a self-assembled monolayer on the surface.

117. (New) The article of claim 115, wherein the first chemical functionality selectively binds a species selected from the group consisting of proteins, antibodies, antigens and carbohydrates.

118. (New) A device having a surface, comprising:  
a layer of a molecular species, comprising a biological attachment agent, in a first, predetermined pattern, the layer being contiguous with a portion of the surface that is in a second, predetermined pattern, wherein the molecular species terminates in a functional group selected to bind to a particular material.

119. (New) A biological device having a surface, comprising:  
a plurality of spaced apart isolated regions of a molecular species over the surface in a predetermined pattern, wherein the molecular species of the isolated regions is a biological attachment agent that facilitates attachment of biomolecules while maintaining the function of the biomolecules.

120. (New) The device of claim 119, wherein each isolated region is less than 10 microns.

121. (New) The device of claim 120, wherein each isolated region is less than 5 microns.

122. (New) The device of claim 121, wherein each isolated region is less than 0.1 microns.

123. (New) The device of claim 119 wherein the isolated region of a molecular species in a predetermined pattern is surrounded by an inert background region.

124. (New) A device comprising:

at least one isolated region of a molecular species over the surface in a predetermined pattern, wherein the molecular species of the isolated region is a protein attachment agent that facilitates attachment of at least one protein to the isolated region.

125. (New) An array device comprising:

a surface; and one or more immobilization islands in a pattern over the surface and surrounded by a background region, the background region comprising a species forming a self-assembled monolayer and terminating in a functional group selected to bind to a particular material.

126. (New) A device comprising:

a substrate having a surface material;

at least one isolated region over the surface, each isolated region comprising a molecular species comprising the structure R'-A-R", where R' is selected to bind to the surface material, A is a spacer and R" is a group that is exposed; the molecular species being a biological attachment agent.

127. (New) The device of claim 126 wherein the at least one isolated region is surrounded by an inert background region.

128. (New) A device for immobilizing at least one biological material in a specific and predetermined pattern comprising:

a surface;